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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Angelo Bastioli

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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/784,707	Applicant(s) BASTIOLI ET AL.	
	Examiner VICTOR S. CHANG	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7,8,10-32,39,40 and 46-51 is/are pending in the application.
- 4a) Of the above claim(s) 46-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7,8,10-32,39,40 and 51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Applicant's arguments and remarks filed on 9/29/2008 have been entered. Claims 2, 3, and 47-49 have been amended.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In response to the amendments, the grounds of rejection have been updated as set forth below. Rejections not maintained are withdrawn.

Election/Restrictions

4. In view of applicant's election of species "potato starch" in the reply filed on 5/9/2006 and for the same reasons set forth in Office action mailed 7/17/2006, page 2, since newly amended claims 47-49 relates to species distinct from elected species, they are withdrawn. Claims 1-4, 7, 8, 10-32, 39, 40 and 51 are active.

Rejections Based on Prior Art

5. Claims 1-4, 7, 8, 10-32, 39, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altieri [US 5153037].

Altieri's invention relates to a biodegradable shaped product comprising a close-cell expanded flour product. The cell size is typically about 100 to 600 microns and the bulk density of the product is from about 0.1 to 5 lb/ft³ (i.e., 1.6 to 80.3 kg/m³) [col. 7, lines 21-29]. Useful

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flours are starch materials preferably consisting of high amylose starch (fraction having linear molecular arrangement). Starches are obtained from various sources, such as potato, corn, tapioca, and rice, etc. Plant species can be genetically developed to provide high amylose starch. For instance, high amylose hybrid varieties of corn (amylomaize) have been developed to yield starch composed of over 45% amylose [col. 4, ll. 4-23]. While high amylose corn starch has been especially suitable, other starches which are useful include those derived from any plant species which produces or can be made to produce a high amylose content starch, e.g., corn, peas, barley and rice. Additionally, high amylose starch can be obtained by separation or isolation such as the fractionation of a native starch material or by blending isolated amylose with a native starch [col. 4, ll. 29-37]. The starch can be derivatized (modified) by known processes, such as esterification, etherification, oxidation, acid hydrolysis, or cross-linking and enzyme conversion (destructured or complexed starch) [col. 4, ll. 47-51]. The density, resiliency and flexibility of the expanded flour product can be improved by incorporating various synthetic polymers, such as polyvinyl alcohol, polyvinyl acetate, polyurethane, polystyrene, poly(ethylene vinyl acetate) and polyvinylpyrrolidone [col. 5, lines 28-32]. The modified and unmodified starches are biodegradable polymers of natural origin.

For claims 1-4, 7, 8, 10-32, 39, 40, Altieri is silent about the cell size distribution and the intrinsic viscosity of the foamed product in DMSO. However, since Altieri teaches the same subject matter of the same structure and composition, and made by the same process as the instant invention, workable range of cell size distribution and the process property related intrinsic viscosity are deemed to be obvious routine optimizations to one of ordinary skill in the art, dictated by the same utility of the expanded product as claimed invention. Regarding the

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selection of starch, since Altieri teaches that high amylose starch can be obtained by fractionation of a native starch material or by blending isolated amylose with a native starch, and potato, corn, tapioca, etc., are sources of starches, Altieri anticipates the Markush group of natural starch of claimed invention.

6. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Altieri [US 5153037] in view of Gallagher et al. [US 5219646].

The teachings of Altieri are again relied upon as set forth above.

For claim 51, Altieri teaches that the density, resiliency and flexibility of the expanded product can be improved by incorporating various synthetic polymers (synthetic polymer/starch blends). Altieri is silent about forming the expanded product of a polyester/starch blend. However, Gallagher teaches that blends of starch with polyesters are useful for forming shaped articles of foams etc., for reduced costs and providing adequate strength and toughness properties. The polyesters are based upon polyethylene terephthalate (thermoplastic polymers) [abstract]. It would have been obvious to one of ordinary skill in the art to select polyester/starch blend to make Altieri's expanded product, motivated by the desire to obtain improved properties.

Response to Arguments

7. Applicants argue at Remarks page 12 that

“The Examiner has failed to raise a prima facie rejection with respect to the present claims which specify a starch selected from the group consisting of potato, wheat and tapioca starch. The Examiner has failed to provide any supporting evidence of a potato starch, wheat starch or tapioca starch which has been modified to provide an amylose content required by Altieri, namely one containing at least 45% by weight of amylose.”

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However, as set forth above, Altieri teaches that starches are obtained from various sources, such as potato, corn, tapioca, and rice, etc. Plant species can be genetically developed to provide high amylose starch. For instance, high amylose hybrid varieties of corn (amylomaize) have been developed to yield starch composed of over 45% amylose. Further, Altieri also teaches that potato, corn, tapioca, and rice, etc., are sources of starches, and preferable high amylose starch can be obtained by fractionation of a native starch material or by blending isolated amylose with a native starch, it is clear that *any* natural starches, including potato, corn, tapioca, and rice, etc., can be used. Even if the natural starches may have low initial amylose content, nothing prevents one of ordinary skill in the art from using them, by fractionation or blending, in the process of obtaining high amylose starch.

Applicants argue at page 13 that

“Based upon the arguments in the prior response and Altieri's Table 3, it would seem that one of ordinary skill in the art would understand that the disclosure of a moisture content of 21% or less would not reasonably include moisture contents required by Gallagher et al. because Altieri teaches increasing total moisture content well above the 1% required by Gallagher et al. Please see Altieri at column 7, lines 55-61, which teaches that the total moisture content should be in a range from about 10-21%, preferably from about 13 to 19% and more preferably from about 14-17% by weight. Thus, contrary to the assertion of the Examiner, it would not appear that one of ordinary skill in the art would combine the teachings of the references "with a reasonable expectation of success.”

However, since Altieri clearly teaches that moisture content is result effective, and useful range is 21% or less, i.e., a controlled low moisture content, it is unseen how one of ordinary skill in the art would fail to optimize the moisture content. Applicants' argument directed to embodiments not relied upon is unpersuasive.

Conclusion

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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794